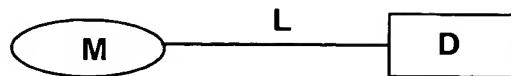


CLAIMS

1 1. A compound of Formula I:



2

I

4 wherein

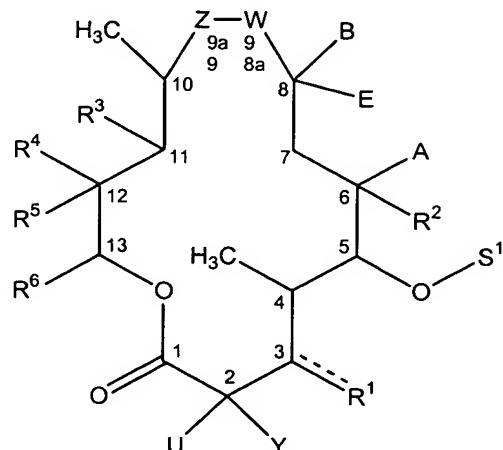
5 **M** represents a macrolide subunit;

6 **D** represents a nonsteroidal subunit;

7 **L** is a linker molecule to which each of **M** and **D** are covalently linked; and

8 pharmaceutically acceptable salts and solvates thereof and individual
9 diastereoisomers thereof.

1 2. A compound according to claim 1 wherein **M** represents a group of
2 Formula II:



3

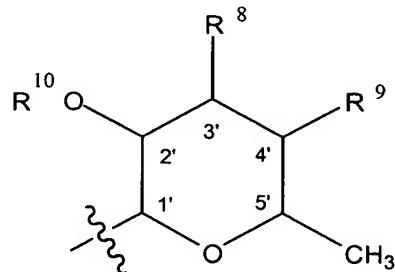
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II

5 wherein:

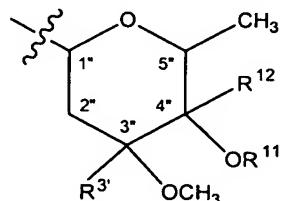
6 Z and W independently are: >C=O, >CH₂, >CH-NR_tR_s, >N-R_N or
7 >C=N-R_M or a bond wherein:8 R_t and R_s independently are hydrogen or alkyl;9 R_M is hydroxy, alkoxy, substituted alkoxy or OR^P;10 R_N is hydrogen, R^P, alkyl, alkenyl, alkynyl, alkoxy, alkoxyalkyl, or -C(X)-
11 R_tR_s; wherein X is =O or =S;12 provided that Z and W cannot both simultaneously be, >C=O, >CH₂,
13 >CH-NR_tR_s, >N-R_N or >C=N-R_M or a bond,

14 U and Y independently are hydrogen, halogen, alkyl, or hydroxyalkyl;

15 R¹ is hydroxy, OR^P, -O-S² group or an =O;16 S¹ is a sugar moiety of formula:

17

18 wherein

19 R⁸ and R⁹ are both hydrogen or together form a bond, or R⁹ is hydrogen
20 and R⁸ is -N(CH₃)R^y, wherein21 R^y is R^P, R^z or -C(O)R^z wherein R^z is hydrogen or alkyl or
22 alkenyl or alkynyl or cycloalkyl or aryl or heteroaryl or alkyl
23 substituted with C₂-C₇-alkyl, C₂-C₇-alkenyl, C₂-C₇-alkynyl, aryl
24 or heteroaryl25 R¹⁰ is hydrogen or R^P;26 S² is a sugar moiety of formula :

27

28 wherein:

29 R³ is hydrogen or methyl;

R¹¹ is hydrogen, R^p or O-R¹¹ is a group that with R¹² and with C/4" carbon atom forms a >C=O or epoxy group;

R¹² is hydrogen or a group that with O-R¹¹ group and with C/4" carbon atom forms a >C=O or epoxy group;

34 R² is hydrogen, hydroxy, OR^p or alkoxy

35 A is hydrogen or methyl;

36 B is methyl or epoxy;

37 E is hydrogen or halogen;

38 R³ is hydroxy, OR⁶, alkoxy or R³ is a group that with R⁵ and with C/11 and

39 C/12 carbon atoms forms a cyclic carbonate or carbamate; or if W or Z is > N-R_N

40 R³ is a group that with W or Z forms a cyclic carbamate:

41 R⁴ is C₁-C₄ alkyl:

R⁵ is hydrogen, hydroxy, OR^p, C₁-C₄-alkoxy, or a group that with R³ and with C/11 and C/12 carbon atoms forms a cyclic carbonate or carbamate;

44 R⁶ is hydrogen or C₁-C₄-alkyl;

45 wherein M has a linkage site through which it is linked to D via linking group L;
46 provided that the linkage site being at one or more of the following:

- 47 a) any reactive hydroxy, nitrogen, or epoxy group located on S¹, S², or
48 an aglycone oxygen if S¹ or/and S² is cleaved off;
49 b) a reactive > N-R_N or -NR₁R₂ or =O group located on Z or W;
50 c) a reactive hydroxy group located at any one of R¹, R², R³, and R⁵;
51 d) any other group that can be first derivatized to a hydroxy or

-NR_ns group and

1 3. A compound according to claim 1 wherein L represents a group of

$$x_1^1(\text{CH}_2) \rightarrow x_2^1(\text{CH}_2) \rightarrow x_3^2$$

4

IV

5 wherein

6 X¹ is selected from: -CH₂-, -C(O)-, OC(O)-, N-O- or -OC(O)NH-, -C(O)NH-;7 X² is -NH- or -NHC(O)-, -OC(O)-, -C(O)-, -O or -CH₂-;8 Q is -NH- or -CH₂-, or absent;

9 wherein each -CH₂- or -NH- group may be optionally substituted by C₁-C₇-alkyl,
10 C₂-C₇-alkenyl, C₂-C₇-alkynyl, C(O)R^x, C(O)OR^x, C(O)NHR^x wherein R^x may be
11 C₁-C₇-alkyl, aryl or heteroaryl;

12 the symbols m and n independently are a whole number from 0 to 4, with the
13 proviso that if Q is NH, n cannot be 0.

1 4. A compound as claimed in claim 1 wherein D is derived from the NSAIDs
2 selecting from: aceclofenac, acemetacin, acetaminophen, acetaminosalol, acetyl-
3 salicylic acid, acetyl-salicylic-2-amino-4-picoline-acid, 5-aminoacetylsalicylic acid,
4 alclofenac, aminoprofen, amfenac, ampyrone, ampiroxicam, anileridine, bendazac,
5 benoxaprofen, bermoprofen, α -bisabolol, bromfenac, 5-bromosalicylic acid acetate,
6 bromosaligenin, bucloxic acid, butibufen, carprofen, celecoxib, chromoglycate,
7 cinmetacin, clindanac, clopirac, sodium diclofenac, diflunisal, ditazol, droxicam,
8 enfenamic acid, etodolac, etofenamate, felbinac, fenbufen, fenclozic acid, fendosal,
9 fenoprofen, fentiazac, fepradinol, flufenac, flufenamic acid, flunixin, flunoxaprofen,
10 flurbiprofen, glutametacin, glycol salicylate, ibufenac, ibuprofen, ibuproxam,
11 indomethacin, indoprofen, isofezolac, isoxepac, isoxicam, ketoprofen, ketorolac,
12 lornoxicam, loxoprofen, meclofenamic acid, mefenamic acid, meloxicam,
13 mesalamine, metiazinic acid, mofezolac, montelukast, nabumetone, naproxen,
14 niflumic acid, nimesulide, olsalazine, oxaceprol, oxaprozin, oxyphenbutazone,
15 paracetamol, parsalmide, perisoxal, phenyl-acethyl-salicylate, phenylbutazone,
16 phenylsalicylate, pyrazolac, piroxicam, pirprofen, pranoprofen, protizinic acid,
17 reserveratol, salacetamide, salicylamide, salicylamide-O-acetyl acid, salicylsulphuric
18 acid, salicin, salicylamide, salsalate, sulindac, suprofen, suxibutazone, tamoxifen,
19 tenoxicam, tiaprofenic acid, tiaramide, ticlopridine, tinoridine, tolfenamic acid,

20 tolmetin, tropesin, xenbucin, ximoprofen, zaltoprofen, zomepirac, tomoxiprol,
21 zafirlukast and cyclosporin.

1 5. A compound according to claim 2 wherein Z and W together are: -N(CH₃)-
2 CH₂-, -NH-CH₂-, -CH₂-NH-, -C(O)-NH- or -NH-C(O)-;

3 A and B are methyl;

4 E is hydrogen;

5 R² is hydroxy or methoxy;

6 S¹ represents desosamine sugar wherein R⁸ is selected from: hydrogen, methyl,
7 amino, C₁-C₆ alkylamino or C₁-C₆ dialkylamino;

8 R⁹ and R¹⁰ are hydrogen;

9 R¹ is hydroxy or the O-S² group wherein the S² represents a cladinose sugar
10 wherein:

11 R¹¹ is hydrogen, or O-R¹¹ is a group that with R¹² and with C/4" carbon atom
12 forms a >C=O or epoxy group; R¹² is hydrogen or a group that with O-R¹¹
13 and with C/4" carbon atom forms a >C=O or epoxy group;

14 R¹³ is methyl;

15 U is hydrogen

16 Y is methyl;

17 R₆ is hydroxy, methyl or ethyl;

18 R⁵ is hydrogen, hydroxy, methoxy or a group that with R³ and with C/11 and C/12
19 carbon atoms forms a cyclic carbonate or carbamate bridge;

20 R³ is hydroxy or a group that forms a cyclic carbamate bridge with W or Z, or R³ is
21 a group that with R⁵ and with C/11 and C/12 carbon atoms forms a cyclic carbonate
22 or carbamate bridge;

23 R⁴ is methyl;

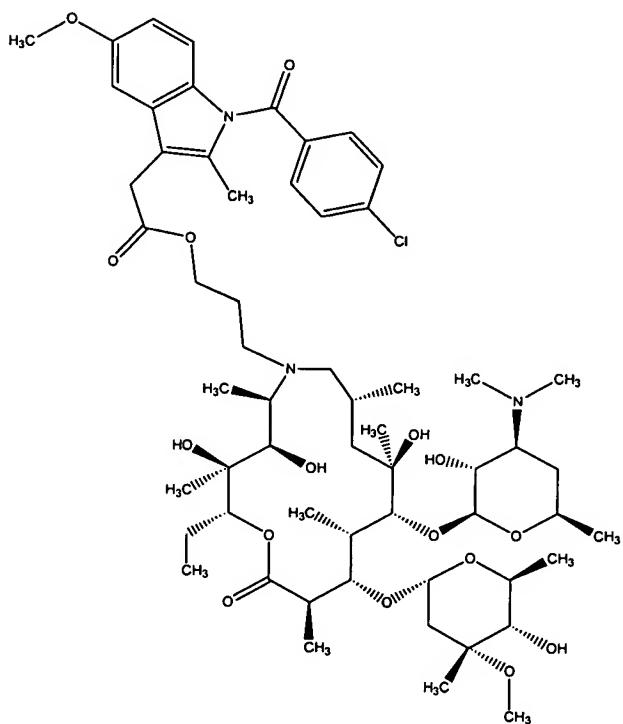
24 provided that the linkage is through the nitrogen of Z at N/9a position or through
25 the carbon of R¹² or through the oxygen of R¹¹ both at C/4"position of the S² sugar.

1 6. A compound according to claim 3 wherein

- 2 X¹ is -CH₂- or -OC(O)-;
- 3 X² is -NHC(O)-;
- 4 Q is -NH- or absent.

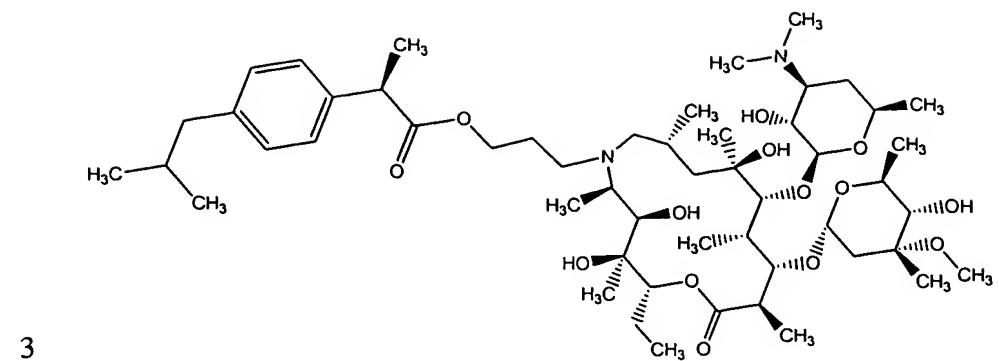
- 1 7. A compound according to claim 4 wherein
 - 2 D is derived from a NSAID selecting from: S-(+)- ibuprofen, indomethacin, flurbiprofen, naproxen, ketoprofen, acetyl salicylic acid, sulindac, etodolac, ketorolac, suprofen, flunixin, diclofenac sodium and tolmetin sodium.

- 1 8. A compound of the formula

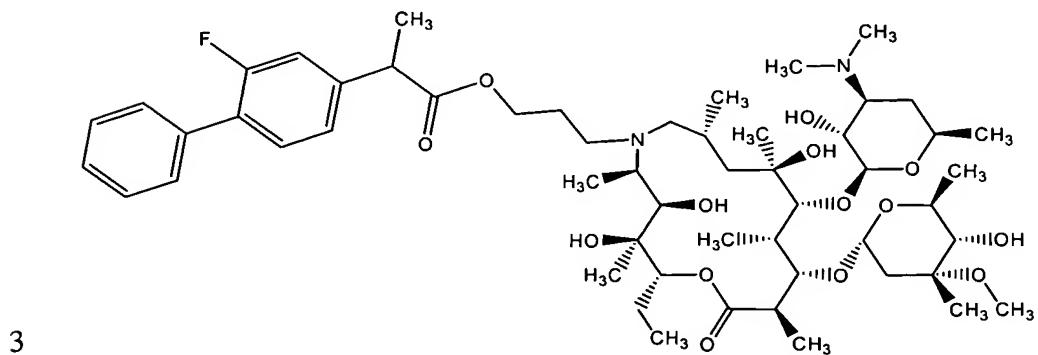


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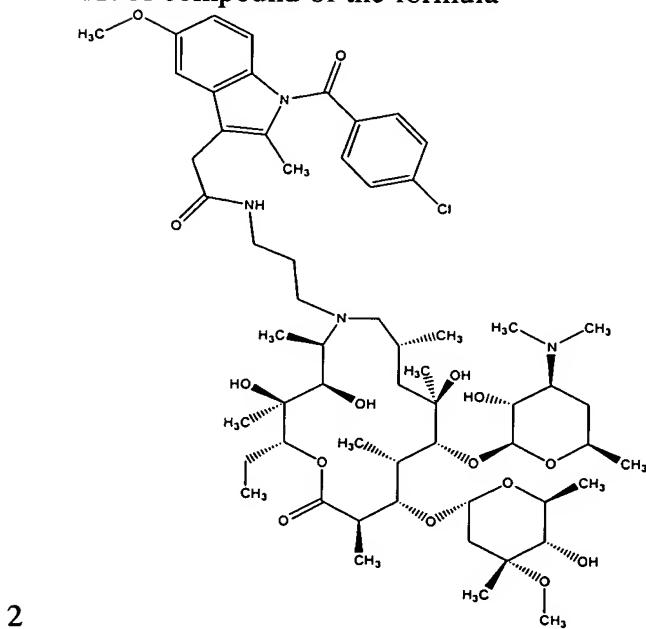
- 1 9. A compound of the formula
- 2



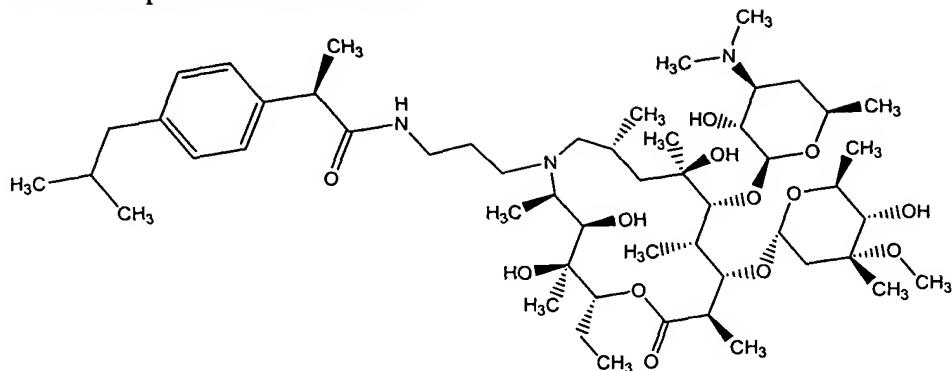
1 10. A compound of the formula
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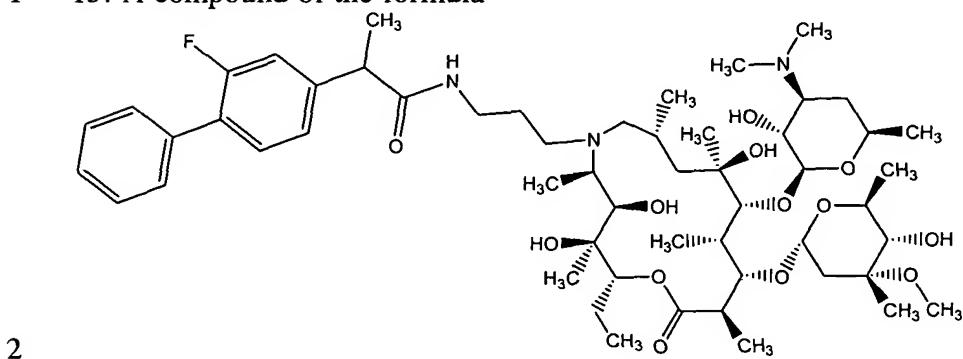
1 11. A compound of the formula



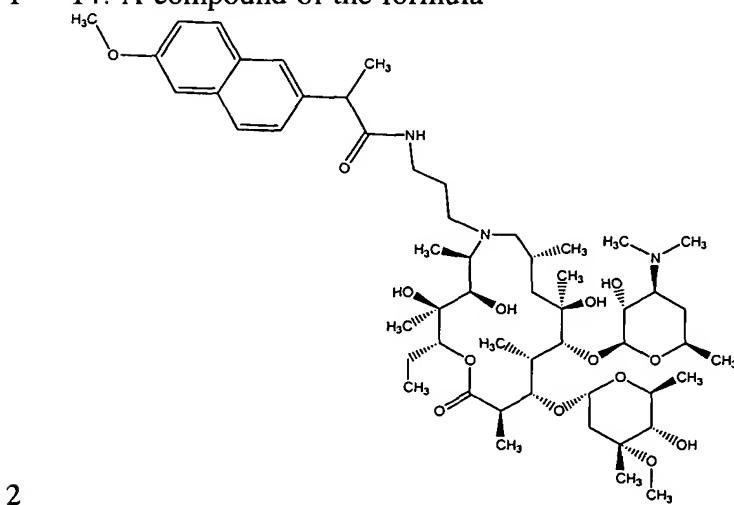
1 12. A compound of the formula



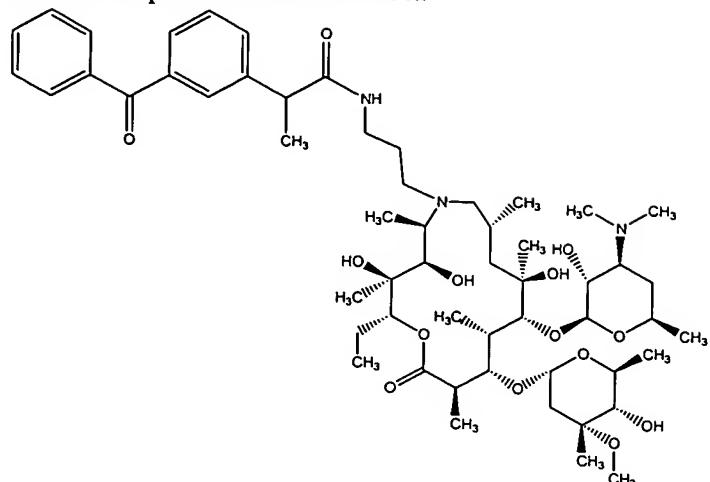
1 13. A compound of the formula



1 14. A compound of the formula

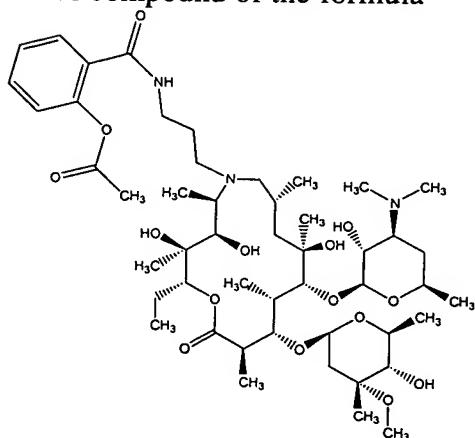


1 15. A compound of the formula



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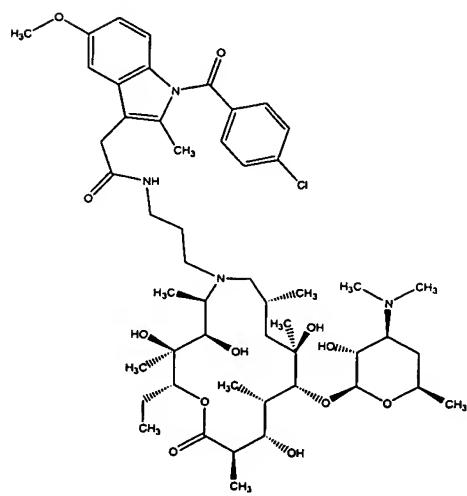
1 16. A compound of the formula



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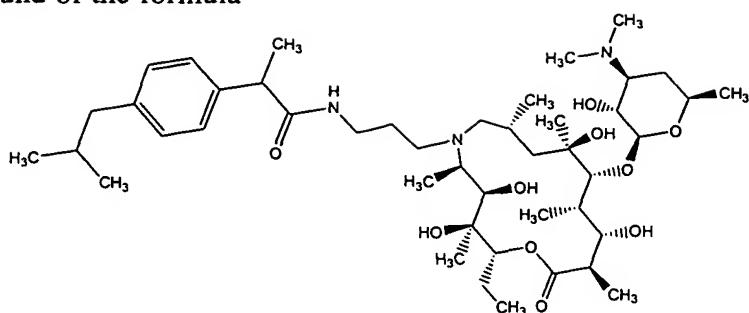
1 17. A compound of the formula

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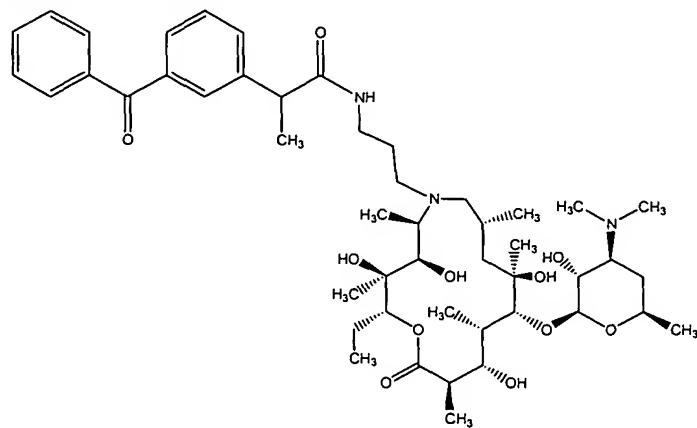
1 18. A compound of the formula

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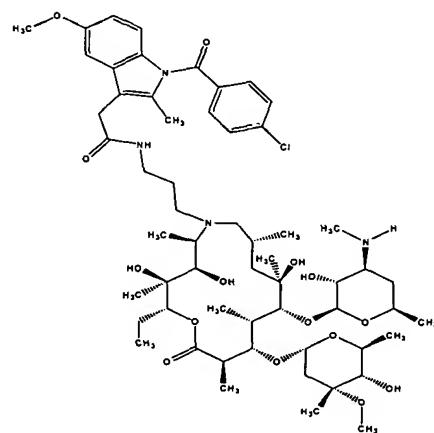
1 19. A compound of the formula

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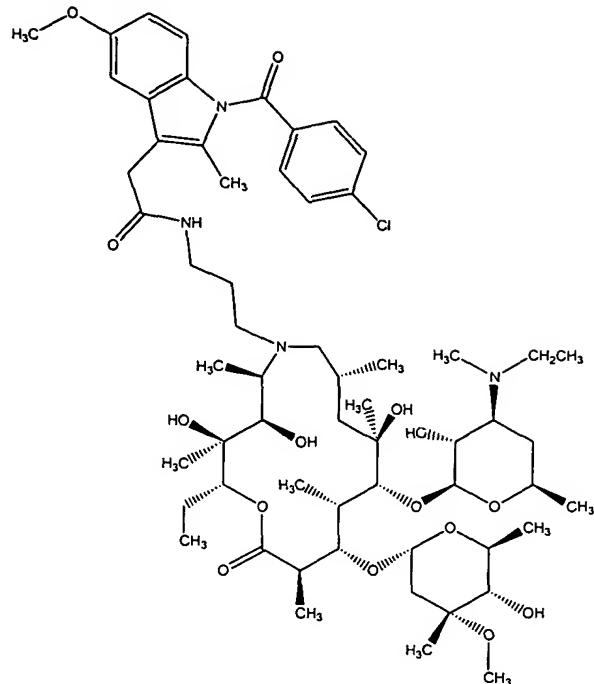


1 20. A compound of the formula

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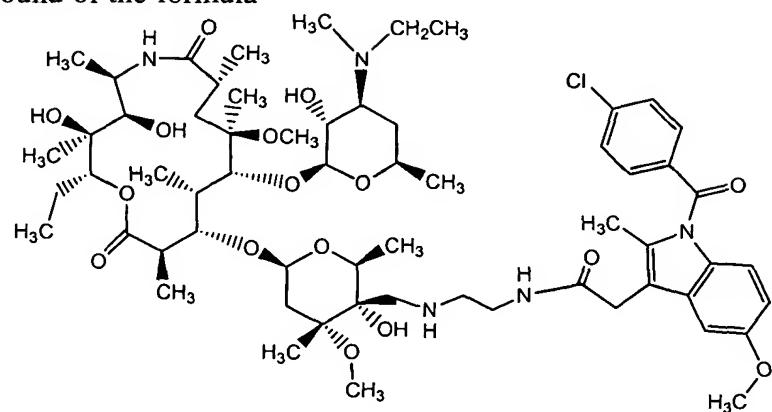


1 21. A compound of the formula



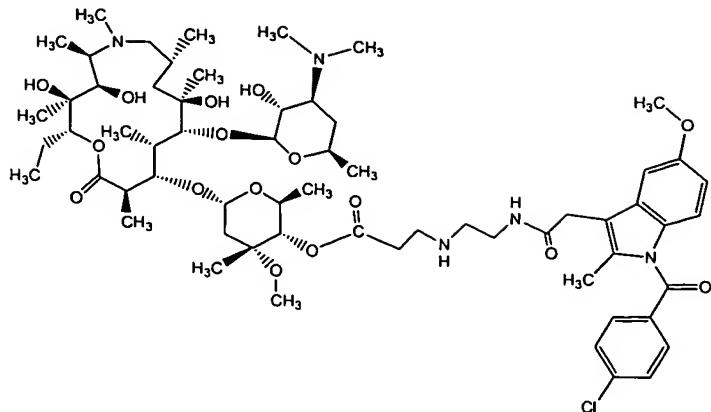
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1 22. A compound of the formula



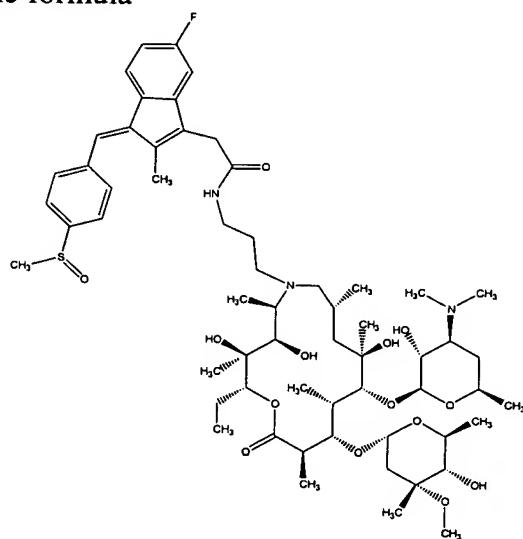
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1 23. A compound of the formula



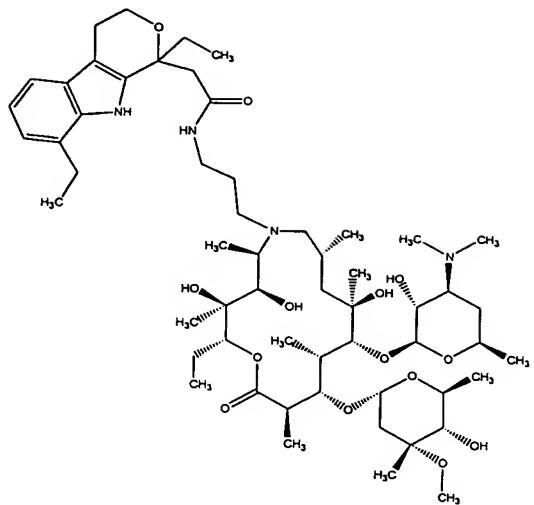
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1 24. A compound of the formula

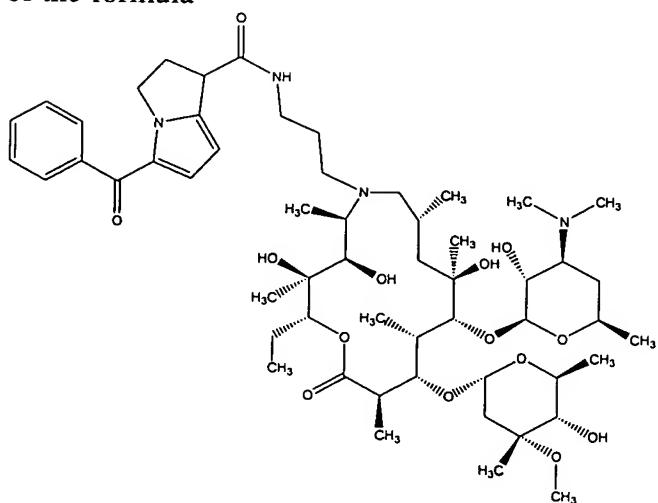


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- 1 25. A compound of the formula
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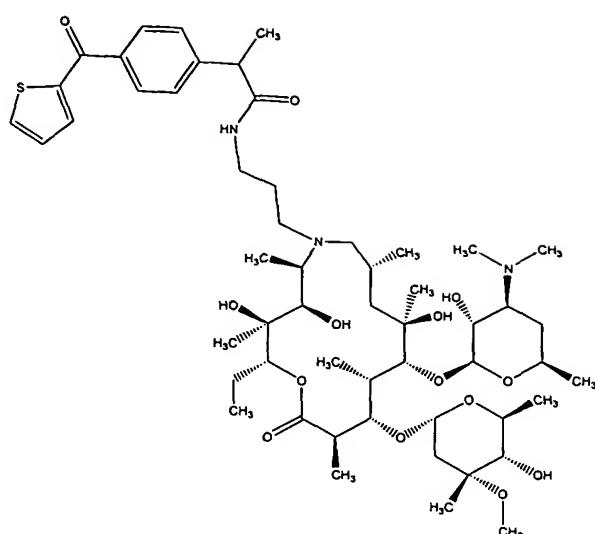


- 1 26. A compound of the formula
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1 27. A compound of the formula

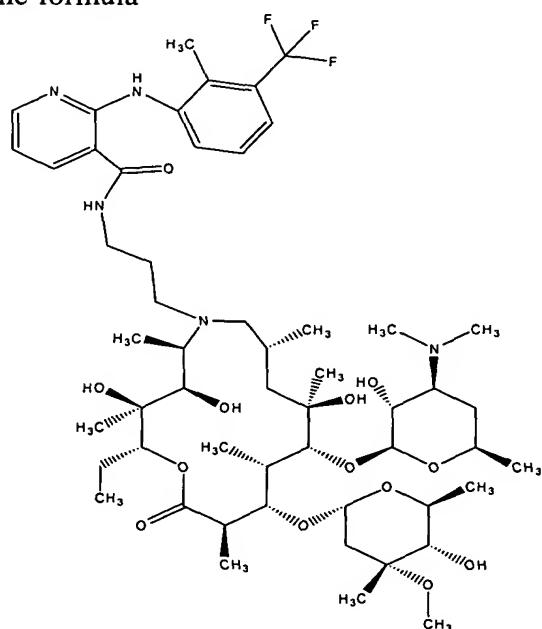
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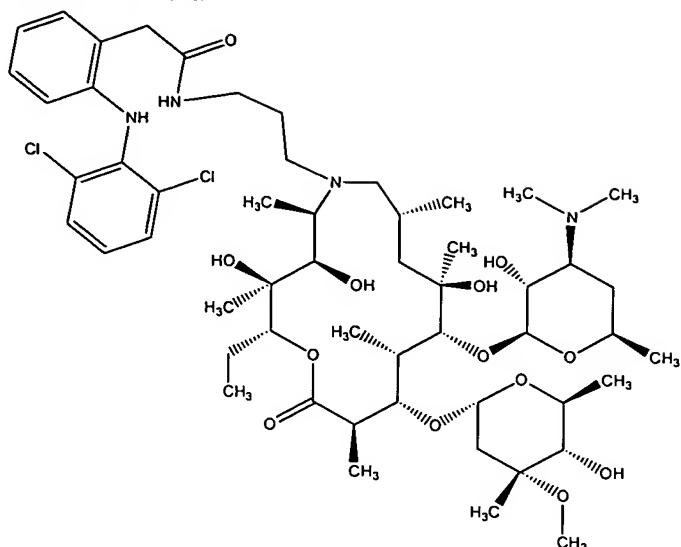
1 28. A compound of the formula

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1 29. A compound of the formula

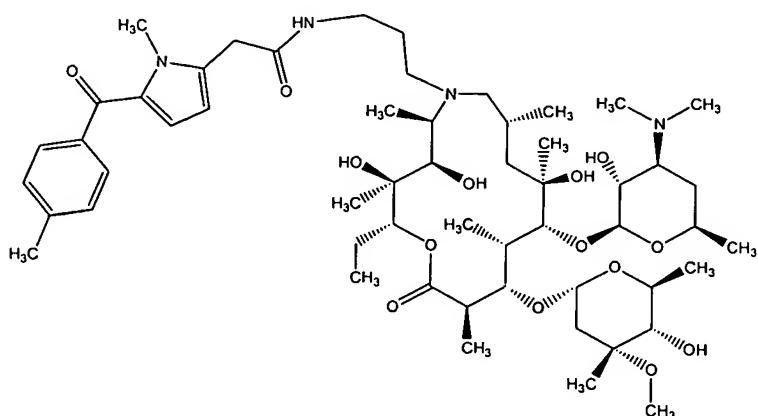
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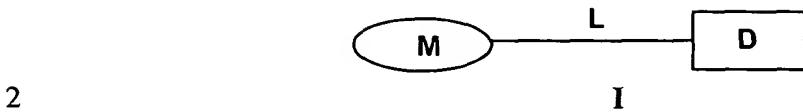
1 30. A compound of the formula

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3



1 31. Process for the preparation a compound of Formula I

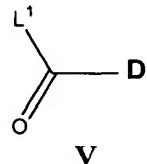


3 which comprises:

4 a) for a compound of Formula I, where X² is -NHC(O)-, by reacting a

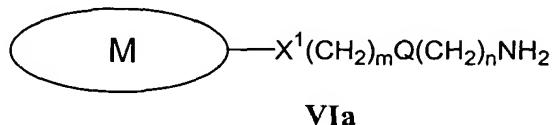
5 compound of Formula V:

6



7 wherein L¹ represents a leaving group, and a free amino group of a
8 macrolide represented by Formula VIa:

9

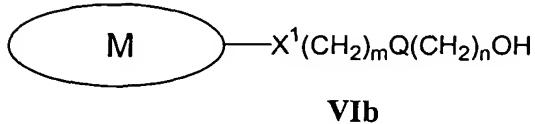


10 b) for a compound of Formula I, where X² is -OC(O)-, by reacting a
11 compound of Formula V and the free hydroxyl group of a macrolide
12 represented by Formula VIb:

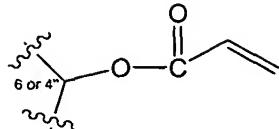
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14

15

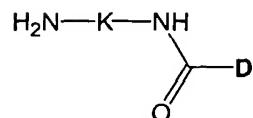


16 c) for a compound of Formula I, wherein X¹ is -OC(O)-, Q is -
 17 NH- and X² is -NHC(O)-, by reacting a macrolide represented by
 18 formula:



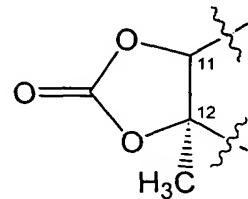
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20 and a free amino group of the compound represented by formula :
 21



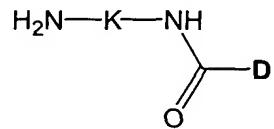
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23 d) for a compound of Formula I, where X¹ is -OC(O)NH- and X² is -
 24 NHC(O)-, by reacting a macrolide represented by formula

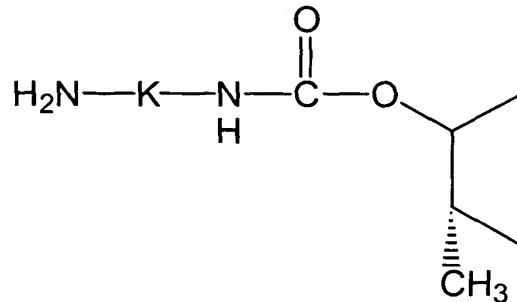


27

and free amino group of the compound represented by formula:



28 e) for a compound of Formula I, where X¹ is -CH₂-, Q is -NH- and X²

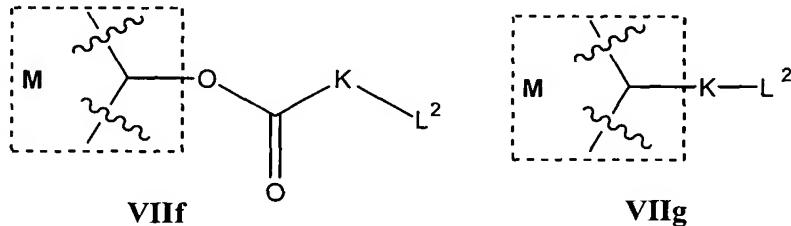


29 is

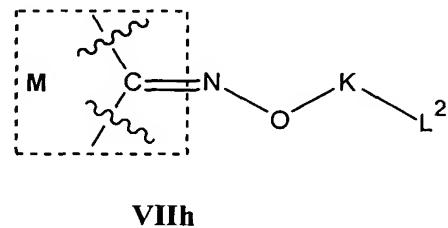
30 -NHC(O)-, by reacting a macrolide represented by formula:

31 and a compound of Formula V;

32 f) for a compound of Formula I by reacting a macrolide represented by
33 Formula VIIf or by Formula VIIg or by Formula VIIh having a leaving group L²



34



35

36 with a free carboxylic acid of nonsteroidal anti-inflammatory subunit.

1 32. A pharmaceutical composition comprising a compound according to claim 1
2 and pharmaceutically acceptable salts or solvate thereof as well as pharmaceutically
3 acceptable diluent or carrier.

1 33. A method of treating inflammatory diseases, disorders and conditions
2 characterized by or associated with an undesirable inflammatory immune response,
3 and all diseases and conditions induced by or associated with an excessive secretion
4 of TNF- α and IL-1 which comprises administering to a subject a therapeutically
5 effective amount of a compound according to claim 1.

1 34. A method of treating inflammatory conditions and immune or anaphylactic
2 disorders associated with infiltration of leukocytes into inflamed tissue in a subject
3 in need thereof which comprises administering to said subject a therapeutically
4 effective amount of the compound represented by Formula I or a pharmaceutically
5 acceptable salts or solvate thereof.

1 35. The method according to claim 34, wherein inflammatory conditions and
2 immune disorders are selected from the group consisting of asthma, adult
3 respiratory distress syndrome, bronchitis, and cystic fibrosis.

1 36. A method according to claim 34, wherein said inflammatory conditions and
2 immune disorders are selected from the group consisting of inflammatory conditions
3 or immune disorders of the lungs, joints, eyes, bowel, skin, and heart.

1 37. A method according to claim 34, wherein said inflammatory conditions and
2 immune disorders are selected from the group consisting of asthma, adult
3 respiratory distress syndrome, bronchitis, cystic fibrosis, rheumatoid arthritis,
4 rheumatoid spondylitis, osteoarthritis, gouty arthritis, uveitis, conjunctivitis,

5 inflammatory bowel conditions, Crohn's disease, ulcerative colitis, distal proctitis,
6 psoriasis, eczema, dermatitis, coronary infarct damage, chronic inflammation,
7 endotoxin shock, and smooth muscle proliferation disorders.

1 38. A method for abating inflammation in an affected organ or tissue comprising
2 delivering to said organ or tissue a therapeutically effective amount of the
3 compound represented by Formula I or a pharmaceutically acceptable salts or
4 solvate thereof.